

# The Automobile Speaks

It tells you what it is, what it requires and it asks to be treated fairly.

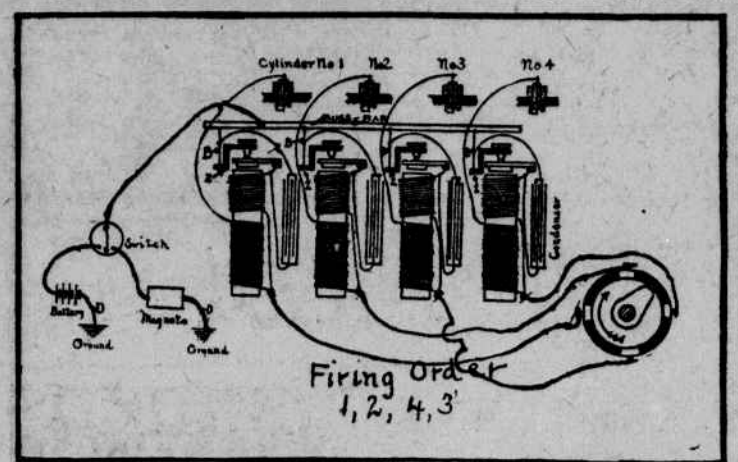
By Frederick C. Guerrich.  
No. 46—THE FOUR UNIT SYSTEM.

In this talk we are to see how the vibrator coil, explained in the last lesson, is used with a four cylinder engine. While practically all other ignition systems have but one coil, where the vibrator coil is used there usually is a coil for each cylinder. For this reason this system is called the "Four Unit System."

In the last lesson we saw how the spark was timed by timing the vibrations of the coil. Obviously, if we have four cylinders and four coils, all that will be necessary, in order to time the four coils and four cylinders, will be to have four segments on the timer instead of only one. Such a timer in connection with the four coils is shown in the illustration, Fig. 1.

Instead of having a wire go to the battery from each of the four coils they are connected together by a wire or bar of copper, and a single wire is run from this bar to the battery or magnet. This bar, which is shown in the illustration, is called a buss bar.

Let us now trace the primary current and, for a change, let us do this backward. Thus the current will start at the battery or magnet, then go through the grounded wire D to the engine, then through the engine to the



rotor, through the rotor to the segment with which the motor is in contact, then to the coil connected to this segment, through the coil, then vibrator, then to the buss bar by wire B and so to the switch and back to the battery.

You will notice that the current goes only through the coil connected to the segment with which the rotor is in contact, so that the secondary current will be produced only on this coil, and there will therefore be a spark only in the cylinder to which the secondary wire of this coil is connected. As the rotor revolves it will come in contact with the next segment, and the vibrator of the coil connected with this segment will vibrate and a spark will be produced in the cylinder whose spark plug is connected to the secondary of this coil. Thus we get the sparks in the cylinders one after the other, the order in which they come depending on the order in which the wires are connected to the coils.

In wiring a four unit system it is the practice to connect the secondary wires from the coils to the plugs in numerical, or 1-2-3-4, order, and to connect the primary wires to the timer in the firing order, as is shown in the illustration.

As to the source of current. In the Ford cars the current generally comes from a magnet, but to facilitate starting the engine a battery is also often used, a switch being used to switch from the one to the other. Such a switch is shown in the illustration.

**The Condenser.**  
In all ignition systems having an interrupter, either vibrating or mechanical, there will be a great building up or piling up of the voltage at the points instant after the points open, which really means the moment the flow of the current is stopped at these points. The result, if nothing is added to prevent, will be that the current will jump across the points, giving a spark. The spark will gradually burn away the points, and also because the current has jumped it has not been completely stopped, and so the action of the coil in transforming the voltage from low to high will be interfered with. The device used to prevent the jumping of the current across the points is the condenser.

A condenser is made of two or more sheets of tinfoil which are separated by a sheet of insulating wax paper. These are then rolled into a bundle and a wire connected to one of the sheets and to one side of the interrupter, while another wire is connected to the other side of the points and the other piece of tinfoil. When the points are suddenly opened, instead of the current jumping across the points it will travel to the tinfoil, not being able to get across because of the insulating paper, will be collected—sort of stored up—there. When the points are again closed this stored up current will run out of the condenser and join the current from the battery.

When the current jumps across the interrupter points not only will it cause the burning out of the points, but the flow of the current will not be stopped suddenly enough, so that the intensity of the secondary will be decreased and the spark at the plugs will thus not be so hot. As a rule you cannot see the condenser, as it is usually placed in the coil box alongside of the coil.

## BEAUTY WITH POWER, THAT IS THE MAXWELL

"One of the most perplexing problems confronting the automobile manufacturer is that of a suitable combination of beauty in appearance with mechanical goodness," says Henry J. DeBor, president and general manager of the Maxwell-Chalmers Distributing Corporation. "And this is especially true in the light car class."

"An unusually beautiful car—especially if it is one of medium price—is likely to create doubt concerning its mechanical accomplishments."

"And, yet, a car without beauty, even though it may deliver remarkably fine performance, cannot long endure in the present market."

"The car buyer of to-day demands mechanical excellence together with stylish appearance and luxurious comfort."

"This fact allows the manufacturer but a single policy; he must first establish the merit of his product and maintain it; then he must furnish a body design that will appeal

strongly to the buyer. No other course can be successful."

"In the new series good Maxwell the new and powerful organization which produces it has demonstrated the success of such a course of action and to it is attributable the high praise the good Maxwell has gained from its owners and the motoring public in general."

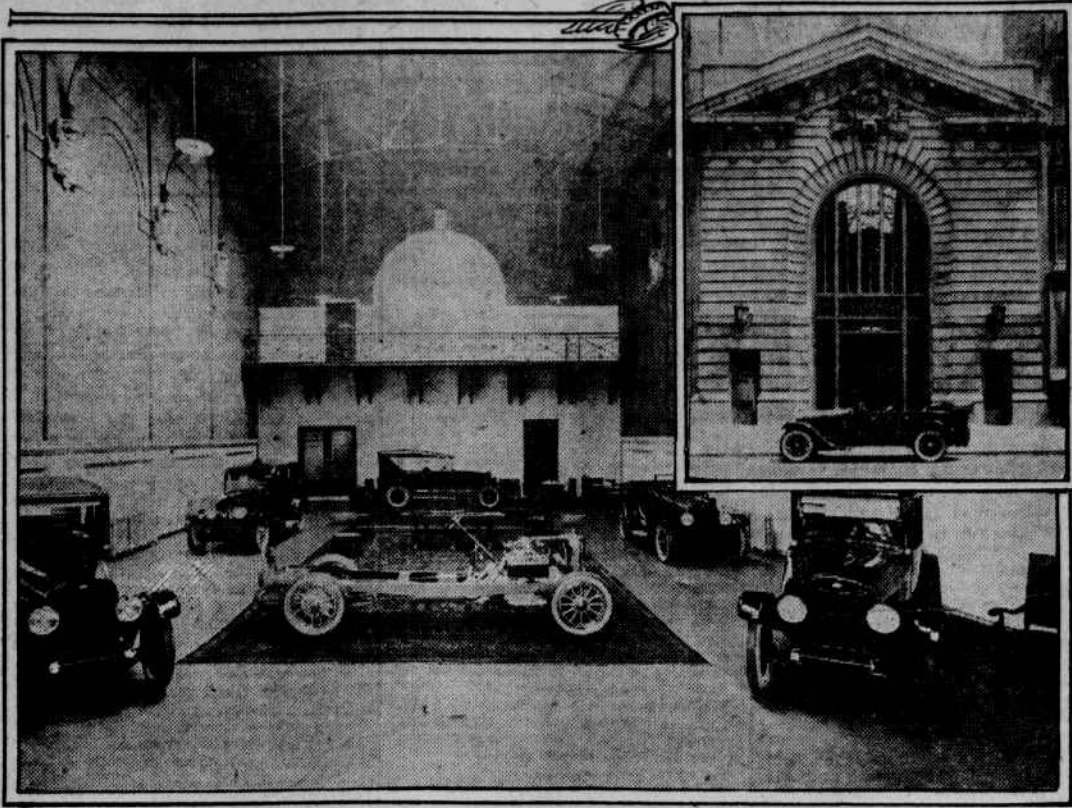
"To a chassis of proven worth was given a beautiful, new body—the finest, I think, ever used on any light car."

### TRADE NOTES.

The operation of the Locomobile Company's plant at Bridgeport and of its various branches throughout the country is continuing without interruption during its re-organization. So far as the internal affairs of the company are concerned, they are not disturbed in the transaction of the routine of business. This is due largely to the appointment of men within the organization to the positions of receivers in the various Federal districts.

The Richmond County Automobile Dealers Association will hold an automobile show in the Coliseum at Port Richmond, Staten Island from February 22 to 25th. Thirty-six representative makes of cars will be shown. Harry Sternberg, well known in New York's automobile row, is secretary of the show.

## Magnificent New York Home of the Lincoln



Probably the most impressive automobile showroom in the country is that of the York Motor Corporation—New York home of the Lincoln—at 217 West Fifty-seventh street. Here one finds a building of unusual design, which was the private riding ring of Frank J. Gould before society became more interested in motors than in horses. Designed by one of the city's best architects and constructed of imported stone and brick, this building was for years a place where the city's most fashionable lovers of saddle horses gathered as the guests of Mr. Gould.

This beautiful building readily lent itself to the few changes necessary to transform it into a remarkable show place for the display of high grade automobiles. The main floor is 50x100 feet and it is 65 feet from the floor to the highest point in the ceiling. Here the complete line of Lincoln cars may be shown without the slightest suggestion of crowding. It is a dignified setting for the beautiful cars shown there.

It was left to Milton J. Budlong, president of the York Motor Corporation and one of the most successful merchants of high grade cars in the country, to see the possibilities of making this former rendezvous for aristocratic horses the home of an aristocratic line of cars. When he became metropolitan distributor for the Lincoln in the spring of 1920 he quickly got possession of this unique made-to-order show place and just as quickly had it suitably prepared for occupancy. It instantly attracted the attention of the well to do who had pleasant memories of the place when Mr. Gould owned it. Mr. Budlong, in one stroke, introduced the new Lincoln to a successfully by associating it with something that specially interested the people who were to become his customers.

Those who knew Mr. Budlong and C. L. Frederick, vice-president of the corporation, and a long time associate of Mr. Budlong, expected that the Lincoln would be properly presented to New Yorkers and ably sold and serviced. They have not been disappointed. These men undertook the task when conditions were not favorable for such a big undertaking. But their faith in the product and the future of business and their natural ability carried them ahead at a great rate, and the momentum gained in this way also carried them successfully through the trying period when a heavy government tax, which was later removed, made it seem almost a certainty that the factory and the great work inaugurated by the famous Leland would have to be permanently

abandoned. Since Henry Ford stepped in with his millions to back his friends, the Leland, and made it possible for them to continue their great work, a splendid business has been done by these two gritty New York representatives and their equally gritty and capable organization. Just as the hats of the entire automobile industry are off to the Leland, so the hats of all the New York dealers are off to Budlong and Frederick.

Mr. Budlong began his automobile career in Chicago with the Pope Manufacturing Company, as manager of the branch there. Then he went to the factory in Hartford, Conn., and as president carried on the manufacture of Columbia cars. In 1903 he joined the Packard Motor Car Company, and became president of the organizations in

New York, Philadelphia and Chicago and assistant general manager of the parent company in Detroit. Mr. Budlong left the Packard Company in 1915 and went into the export business. "The he became distributor of the Lincoln here."

Mr. Frederick was with the Packard Motor Car Company for ten years, beginning in 1903. Then he became vice-president and general manager of the Packard Motor Car Company, and after five years with that concern took up war work which kept him busy during hostilities in plants throughout the steel district. He rejoined Mr. Budlong in 1920.

The York Motors Corporation not only sells the Lincoln in New York but operates branches in Brooklyn, Newark, Jersey City and Hartford.

## BROOKLYN BEST MOTOR CAR EXHIBIT

Doors Will Be Thrown Open to the Public in Two Weeks.

It is only right that this year's Brooklyn Automobile Show, which opens in two weeks, should be staged in an exceptional setting. It promises to be the best and most interesting ever seen in that borough. With only passenger cars and accessories, the show should make an unusual appeal to the general public. The number of passenger cars and accessory exhibits will far surpass those seen at any other show ever given in Brooklyn and will include many never before seen here.

Indications point to car value at the show this year giving the prospective purchaser more for his money than he has ever received before. The motor car now being shown is a finished product. It is a necessity in daily life, and the business man, the professional man and the general public, which includes the butcher, the baker and the candlestick maker, to use an old saying, find the car a real adjunct to business. Improvements in bodies to be seen at the show indicate that the refinements

for 1922 are chiefly comfort refinements. This means that the enclosed type finds greater popularity than ever before. Better and neater fittings, more leg room, past and enamel for which great durability is claimed are some of the features noted.

## STEINMETZ ELECTRIC SHOWS AMAZING POWER

The new Steinmetz electric truck gave a very convincing demonstration of its power last week by making a sensational climb of the famous Miller avenue hill in Brooklyn through deep snow. It not only made the climb in seven minutes, but stopped midway in the ascent and then resumed its trip without any trouble.

This truck was designed and perfected by Dr. Steinmetz, the internationally known electrical wizard. He was ably assisted by Donald C. Stoppenbach, supervising electrical engineer and former of the General Electric Company; A. M. Leoni, supervising electrical engineer, and G. M. Keller, general manager of the Steinmetz Corporation and formerly with the General Motors Corporation.

George Drake Smith, recently vice-president of the Winther Motor Truck Company, and formerly with the General Vehicle Company and Edison Storage Battery Company, is sales manager of the Steinmetz Electric Motor Car Corporation. The Steinmetz factory is at Arlington, Baltimore, Md.

## DURANT GOING BIG IN NEW YORK

Poertner Has Made a Splendid Record With New Car Here.

In a little more than six months since the Durant automobile ever shown in public was put on display by the Poertner Motor Car Company in its New York showroom progress has been extremely rapid. The Poertner Motor Car Company has signed fifty-five dealers in the metropolitan district, so that Long Island, north Jersey and Westchester are well covered with Durant sales and service places. In addition to the Poertner stores at New York, Brooklyn and Newark.

The points covered in New York and Westchester county are Nyack, Ossining, Somers, Fort Richmond, Nanuet, Tarrytown, White Plains, Mount Vernon, Yonkers, Port Chester, New Rochelle, Mount Kisco, Pleasantville, Haverstraw, Scarsdale and Great Kills. The suburban New Jersey distributors take in Elizabeth, Harrison, Hackensack, Harrington Park, Rutherford, Montclair, Bayonne, Union Hill, Jersey City, Plainfield, Summit, Englewood and Perth Amboy.

There is a large group of dealers on Long Island taking in St. James, Northport, Cedarhurst, Queens, Patchogue, Little Neck, Flushing, Jamaica, Bay Shore, Freeport, Glen Cove, Oyster Bay, Hempstead, Forest Hills, Westchester, Richmond Hill, Glendale, Southampton, Sag Harbor, Rockville Centre, Westbury, Woodmere, Huntington and Middle Village.

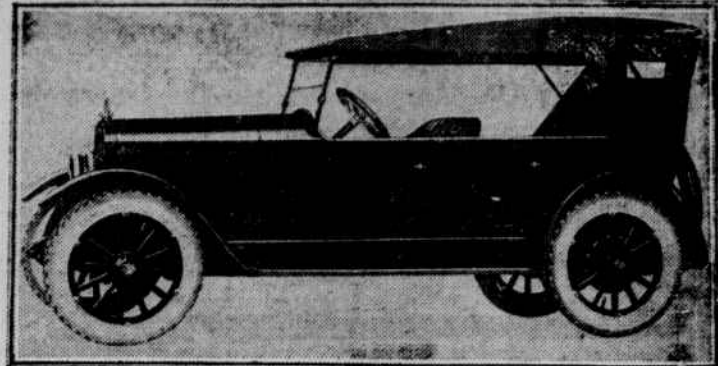
This is just the beginning of the organized distribution of Durant cars," says William C. Poertner, head of the Poertner Motor Car Company, metropolitan distributors of the Durant. "The demand for Durant territory is so strong that we have had the pick of dealers in this district and are still able to get the best there are. More than 60 Durant cars have been sold in the time we have had the line and the demand we are experiencing for spring delivery convinces us we are on the eve of a decidedly bigger selling season."

## RICKENBACKER HAS STOPPED VIBRATION

"Nowadays, a person buying a car expects to get something more than a mere vehicle," says J. J. Hunt, president of the Hunt Motor Car Company, metropolitan distributors for the Rickenbacker car. "He or she wants a car that will give not only recreation and diversion, but one which will be time saving and economical as well. In short, the modern car must now meet modern conditions. The makers of the Rickenbacker realized what the public wanted—a 'stay-put' car that did not develop 'rattle, shudder, and vibration' which could be driven without physical effort by the average man or woman. "Vibration has been the cause of many farmed nerves and is one of the most unpleasant things to contend with in a car. Sooner or later the vibrating machine will cause parts to loosen and then squeaks and rattles become unbearable. There is no period of vibration in the Rickenbacker because of its mechanical construction. Capt. E. V. Rickenbacker has given considerable attention to this particular point in the manufacture of his car, and the double flywheel, one of the unusual features of design in the 1922 cars, is the result."

"The Rickenbacker motor car can be turned over at the speed of a slow walk, then speeded up by slow or fast degrees mile after mile up to better than 60 miles per hour, and there will be no trace of vibration."

## Bowman Sells New Gardner



The announcement by Sidney B. Bowman that he has completed arrangements with the Gardner Motor Company, Inc., of St. Louis, to distribute Gardner cars in the metropolitan district, means the combination of Bowman's more than twenty years successful distribution experience, with Gardner's nearly fifty years of manufacturing experience.

The improved appearance of the new Gardner is very noticeable, many unusual features adding materially to the snap and class of the 1922 models. An aluminum moulding trims the body nicely and deadens the sound of closing doors. A motometer and bar radiator cap nickel finished together with all weather cord tires and heavy tourist inner tubes are standard equipment. As a safety measure Warner-Patterson non-glare headlight lenses with 21 c. p. nitrogen bulbs have been added.

## MOTOR CAR SALES ON THE INCREASE

"One of the real optimists on the row is John C. Hofbauer, general manager of sales for Motor Motors Corporation, distributors of Earl and Tempair cars."

Having had an opportunity to talk with prominent men in various lines of business during a two weeks stay in Miami, Fla., he says the general opinion is that the automobile industry will be one of the first to enjoy complete prosperity again because it has courageously and thoroughly reduced prices to rock bottom.

"I talked with men in the furniture, piano and textile trades," says Mr. Hofbauer, "and all said to me that they admired the automobile men because of the courage they showed in rapidly liquidating stock by price reduction. It was their opinion that the automobile industry right now is doing a greater business than 75 per cent of the other lines of business."

"Whatever doubts and misgivings I may have had before my talks with these men have all vanished. Before I had an opportunity to get first hand information about the situation in other lines I was, like many other men, too close to my own proposition to get the right perspective."

But now that I have been able to stand off at some distance and look over this great automobile industry and compare it with others I am not only enthusiastic over the future but mightily well satisfied with the present."

## NASH OFFICER ENTHUSES OVER BETTER BUSINESS

"The position Nash occupies in the automobile industry is decidedly healthy," says C. B. Voorhis, vice-president and general sales manager of the Nash Motors Company. "The overwhelming endorsement of the Nash product at the Chicago and New York shows, as well as at other shows held so far this season throughout the country, is the strongest possible testimonial to the value of Nash cars."

"The Nash Motors Company went into the shows this year with a new line of cars at prices reduced to rock bottom. Thus, while we are deeply appreciative of the public response, I cannot say we are greatly surprised at the large number of show orders taken. The spring selling season is just at hand, and Nash dealers in most sections of the country are ordering cars for early delivery, and report they are making plans for an unusually busy season."

# WINTERFRONT

**The Self-Acting Radiator Shutter-Cover**

Functions with human intelligence; the shutters opening and closing without attention, maintaining summer riding conditions under the hood. A thermostat controls opening and closing of the shutter.

**Ask Those Who Have One**

Saves battery, saves gas, saves motor and radiator. Send for descriptive booklet telling how. All car manufacturers approve it. Special models for all cars. Any one can attach; entirely self-contained.

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1698 Broadway, N. Y. Tel Circle 2746. Sole distributors N.Y. & N.J.

## A Guarantee of Motor Performance

If you wrote your own guarantee it could not be more liberal than the Special 15,000 mile Motor Performance Guarantee which goes with every New 6-44. Ask to see it.

HERE are a few engine features which show the up-to-date design and construction of the New Oakland 6-44 motor. Surely you will demand these very latest features when you choose a new car.

Unit power plant.	Morse chain drive to camshaft and generator.
Overhead-valve engine with valves enclosed.	Positive force-feed lubrication through drilled crankshaft.
Cylinders honed to a glass-like smoothness.	Water pump integral with cylinder block.
Special alloy pistons, elliptically ground.	Remy electrical system.
Exclusive design oil-sealing piston rings.	Special motor performance guarantee.
Special Bronze-back crankshaft bearings.	

The power, smoothness, flexibility, comfort and reliability of the five New Oakland 6-44 models are the natural results of such careful building.

**OAKLAND MOTOR CAR CO.,**  
1760 Broadway, at 56th St.  
Wholesale New York City Retail  
Phone Circle 4880. Open Evenings.

# Oakland 6-44

PRICES	
Roadster	\$1120
Touring Car	1145
Sport Car	1245
Coupe	1685
Sedan	1785

At Factory

Oakland Motor Car Company, Pontiac, Mich.  
Division of General Motors Corporation

# PAIGE

The Most Beautiful Car in America

IT IS now possible to buy a Paige 6-66 touring car for as little as \$2195. This is the startling news that has electrified all motordom and started a vast wave of buying orders toward the Paige factory.

Visitors to the shows have been frankly amazed when they have inspected the New Series 6-66 line, noted the wealth of refinements and improvements, and attempted to reconcile the greatly reduced prices.

We repeat, a great buying movement has started. So don't delay. See the new 6-66 models at once and place your order for prompt delivery.

The New 6-66 Prices	The New 6-44 Prices
131 inch wheel base—70 horse power	119 inch wheel base—50 horse power
6-66 Lakewood, 7-Pass. Touring - \$2195	6-44 Touring, 5-Pass. - \$1465
6-66 Larchmont II, Sport Type - 2245	6-44 Sport Type, 4-Pass. - 1395
6-66 Daytona, 3-Pass. Roadster - 2495	6-44 Roadster, 3-Pass. - 1465
6-66 Sedan, 7-Pass. - 3155	6-44 Sedan, 5-Pass. - 2245
6-66 Limousine, 7-Pass. - 3350	6-44 Coupe, 4-Pass. - 1995
6-66 Coupe, 5-Pass. - 3100	

All Prices F. O. B. Factory. Tax Extra  
Cord tires standard equipment on all models

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SEDAN \$3535 • ROADKING \$2365 • COUPE \$3435  
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